

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning at page 30, line 1, as follows:

As computing power becomes faster and more compact, it will be possible to encapsulate the computer 4 in the probe 3 as well as having the display 7 mounted on the probe. The probe might have memory 262, which could be both dynamic memory and magnetic memory, such as a CD-ROM or digital video disk (DVD). The probe might have a local power source 260, such as batteries. This would be the case with one or more remote position sensors 261 mounted inside the probe. Although one remote position sensor is sufficient, more accuracy is obtained by averaging the positions coming from three or more remote position sensors. Another benefit of three or more sensors is that when a spurious position is output by one or more sensors, this can be detected and the data ignored. Detection of incorrect positions is by means of comparing the positions output by the three sensors to their physical locations within the probe to see if the variation is larger than the combined, acceptable error of the sensors. Since remote position sensor technology is likely to remain much less accurate than multiply jointed arm technology, it is preferable that probes with remote sensors use array scanning means rather than stripe scanning means. With a single array scan, all the data in the array (i.e., a range image) is accurately registered to each other, but with stripes there are position errors between any two sequential stripes. It is possible to use an ~~iterative close point~~ iterative closest point (ICP) algorithm on overlapping range images to substantially reduce the errors caused by the remote position sensors; but this is not possible with stripes.

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